

ABSTRACT

The present invention includes an automatic injection device that reliably provides automatic needle retraction even when manufactured with part and assembly tolerances typical of low-cost and high-volume manufacturing processes. The injector of the present invention includes a body, a syringe cartridge, a drive mechanism, and a bias mechanism. The drive mechanism includes an energy source, a drive member, and a compound plunger with a releasable coupling. Significantly, the compound plunger included in the drive mechanism is designed to ensure needle retraction occurs after the automatic injection device has delivered the desired the desired dose of medicament.

Moreover, the design of the compound plunger included in the injector of the present invention can compensate for part and assembly tolerances typical of low-cost, high volume manufacturing processes, enabling the fabrication of a low cost automatic injection device providing reliable automatic needle retraction.

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